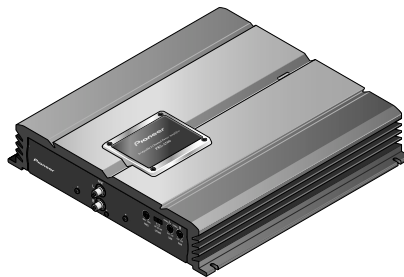


Service Manual



PRS-A500/X1H/EW

ORDER NO.
CRT3353

BRIDGEABLE POWER AMPLIFIER

PRS-A500 /X1H/EW



For details, refer to "Important check points for good servicing".

PIONEER CORPORATION

4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan

PIONEER ELECTRONICS (USA) INC.

P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.

PIONEER EUROPE NV Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium

PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.

Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

● **Service Precaution**



You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

A

CONTENTS

SAFETY INFORMATION2

1. SPECIFICATIONS5

2. EXPLODED VIEWS AND PARTS LIST6

 2.1 PACKING6

 2.2 EXTERIOR8

3. SCHEMATIC DIAGRAM.....10

 3.1 SCHEMATIC DIAGRAM (GUIDE PAGE)10

4. PCB CONNECTION DIAGRAM.....16

 4.1 AMP UNIT16

B

5. ELECTRICAL PARTS LIST20

6. ADJUSTMENT24

7. GENERAL INFORMATION.....25

 7.1 DIAGNOSIS25

 7.1.1 DISASSEMBLY25

 7.1.2 CONNECTOR FUNCTION DESCRIPTION26

8. OPERATIONS27

C

D

E

F

1. SPECIFICATIONS

Power source	14.4 V DC (10.8 — 15.1 V allowable)
Grounding system	Negative type
Current consumption	25 A (at continuous power, 4 Ω)
Backup current	1 mA or less
Average current drawn*	8.5 A (4 Ω for two channels) 14.2 A (4 Ω for one channel)
Fuse	20 A \times 2
Dimensions	300 (W) \times 63 (H) \times 330 (D) mm
Weight	5.8 kg (Leads for wiring not included)
Maximum power output	200 W \times 2 / 600 W \times 1
Continuous power output	100 W \times 2 (at 14.4 V, 4 Ω , 20 — 20 kHz 0.08% THD) 300 W \times 1 (at 14.4 V, 4 Ω , 20 — 20 kHz 0.8% THD) 150 W \times 2 (at 14.4 V, 2 Ω , 20 — 20 kHz 0.8% THD)
Continuous power output (DIN power)	140 W \times 2 / 500 W \times 1 (DIN45324, +B=14.4 V)
Load impedance	4 Ω (2 — 8 Ω allowable) (Bridge connection: 4 — 8 Ω allowable)
Frequency response	10 Hz — 80 kHz (+0 dB, -1 dB)
Signal-to-noise ratio	107 dB (IEC-A network)
Distortion	0.003 % (10 W, 1 kHz)
Separation	70 dB (100 Hz — 10 kHz)
Slew rate	40 V/ μ sec.
Damping factor	100
Low pass filter	Cut off frequency: 40 — 120 Hz Cut off slope: -12 dB/oct
High pass filter	Cut off frequency: 40 — 120 Hz Cut off slope: -12 dB/oct
Gain control	200 mV — 6.5 V
Maximum input level / impedance	RCA: 6.5 V / 22 k Ω

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

*Average current drawn

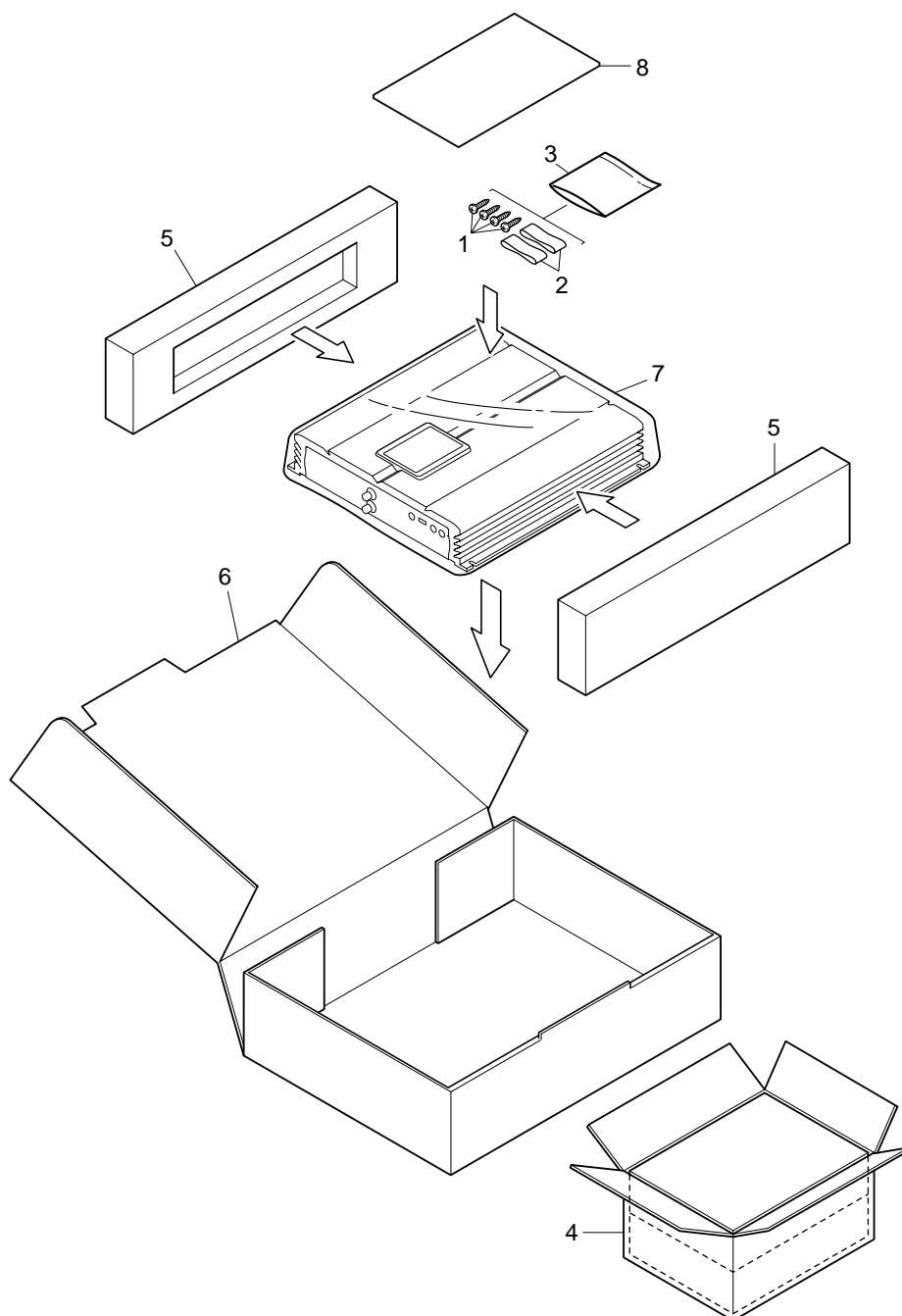
- The average current drawn is nearly the maximum current drawn by this unit when an audio signal is input. Use this value when working out total current drawn by multiple power amplifiers.

2. EXPLODED VIEWS AND PARTS LIST

NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to ▽ mark on the product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING



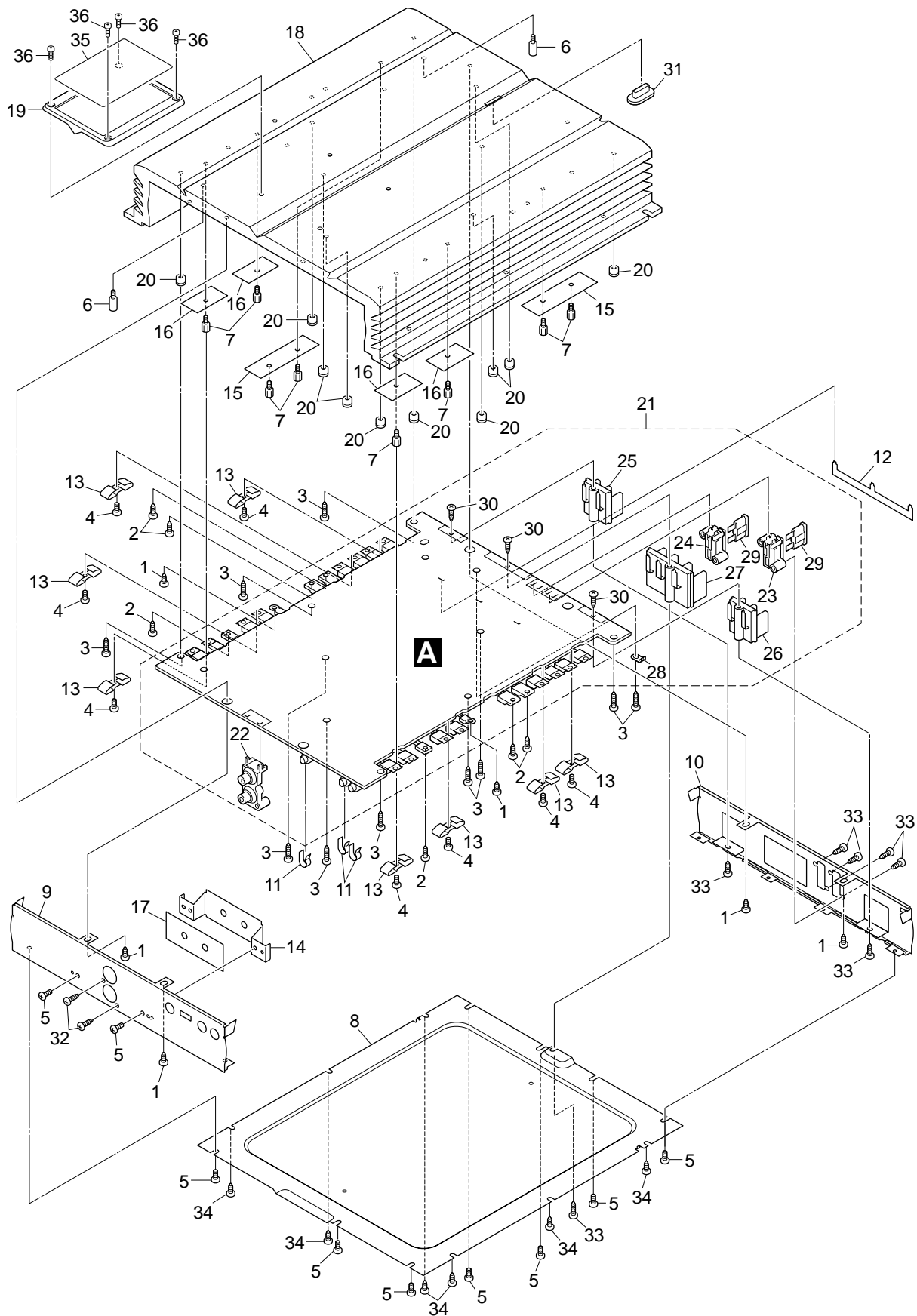
● PACKING SECTION PARTS LIST

Mark No.	Description	Part No.
1	Screw	BYC40P180FZK
2	Cover	HNS0112
3	Polyethylene Bag	HEG0011
4	Contain Box	HHL0446
5	Protector	HHP0266
6	Carton	HHG0446
7	Polyethylene Bag	HEG0022
8-1	Owner's Manual	HRD0280
* 8-2	Warranty Card	HRY1157

● Owner's Manual

Part No.	Language
HRD0280	English, Spanish, German, French, Italian, Dutch

2.2 EXTERIOR



● EXTERIOR SECTION PARTS LIST

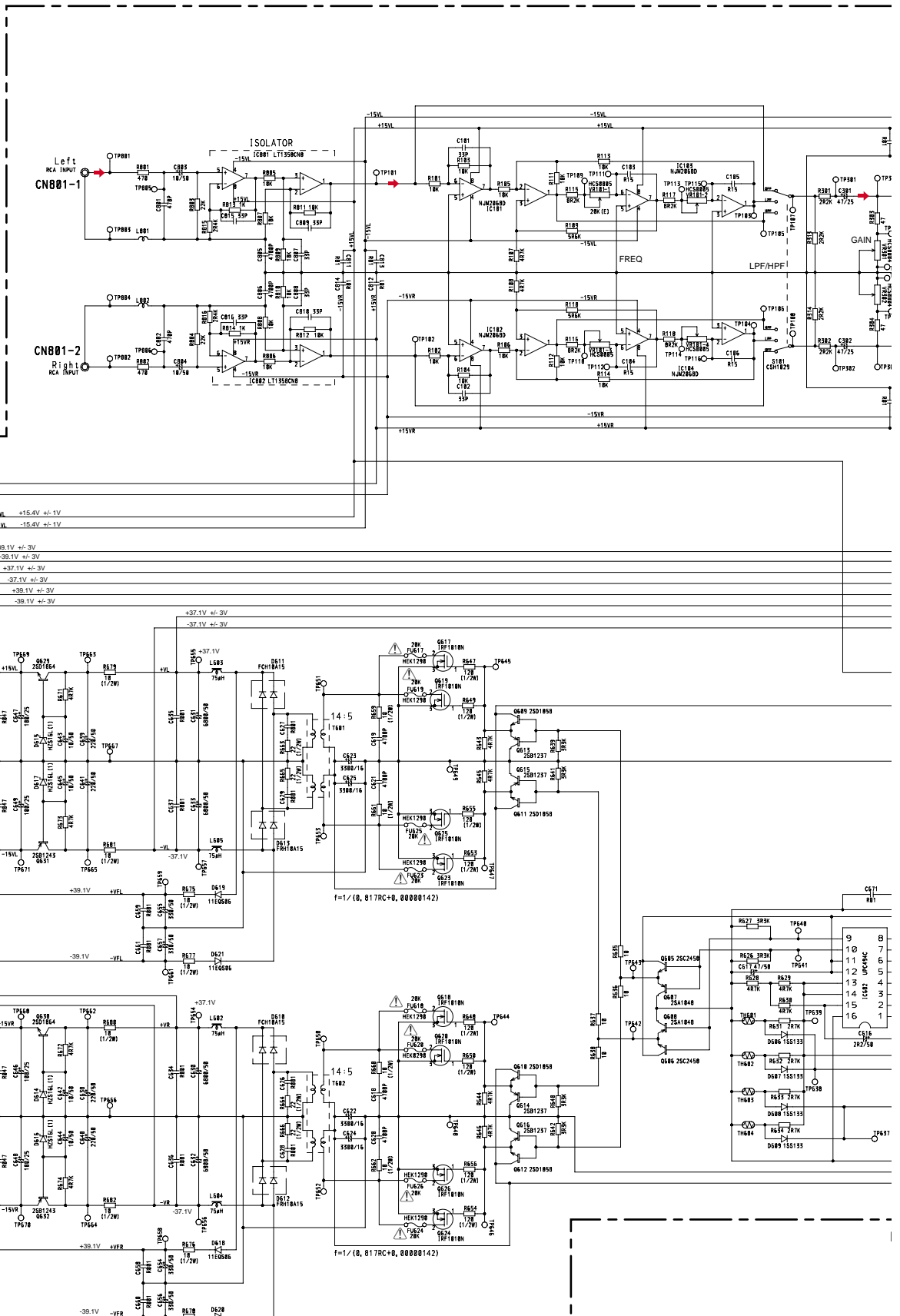
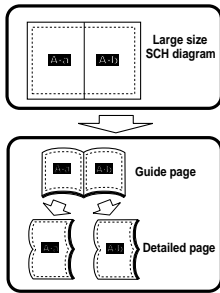
Mark	No.	Description	Part No.
	1	Screw	BBZ30P060FTC
	2	Screw	BBZ30P080FTC
	3	Screw	BBZ30P120FTC
	4	Screw	BMZ30P050FTC
	5	Screw	BSZ30P050FZK
	6	Screw	HBA0028
	7	Stud	HLA0022
	8	Case	HNB0220
	9	Panel	HNB0224
	10	Panel	HNB0225
	11	Clip	HNC0054
	12	Buss Bar	HNC0172
	13	Clip	HNC0189
	14	Holder	HNC0213
	15	Insulator	HNM0208
	16	Insulator	HNM0216
	17	Insulator	HNM0217
	18	Heatsink	HNR0252
	19	Plate	HNS0122
	20	Spacer	HNV0016
	21	Amp Unit	HWH0217
	22	Pin Jack(CN801)	HKB0027
	23	Fuse Holder(CN602)	HKE0012
	24	Fuse Holder(CN603)	HKE0012
	25	Terminal(CN851)	HKE0021
	26	Terminal(CN852)	HKE0021
	27	Terminal(CN601)	HKE1054
	28	Terminal(CN604)	HKF0001
⚠	29	Fuse(FU602,603)(20A)	HEK0020
	30	Screw	PPZ30P100SAD
	31	Light Pipe	HXA0426
	32	Screw	PPZ30P080FZK
	33	Screw	PPZ30P120FZK
	34	Screw	BBZ30P060FZK
*	35	Badge	HAM0036
	36	Screw	HBA1639

3. SCHEMATIC DIAGRAM

3.1 SCHEMATIC DIAGRAM (GUIDE PAGE)

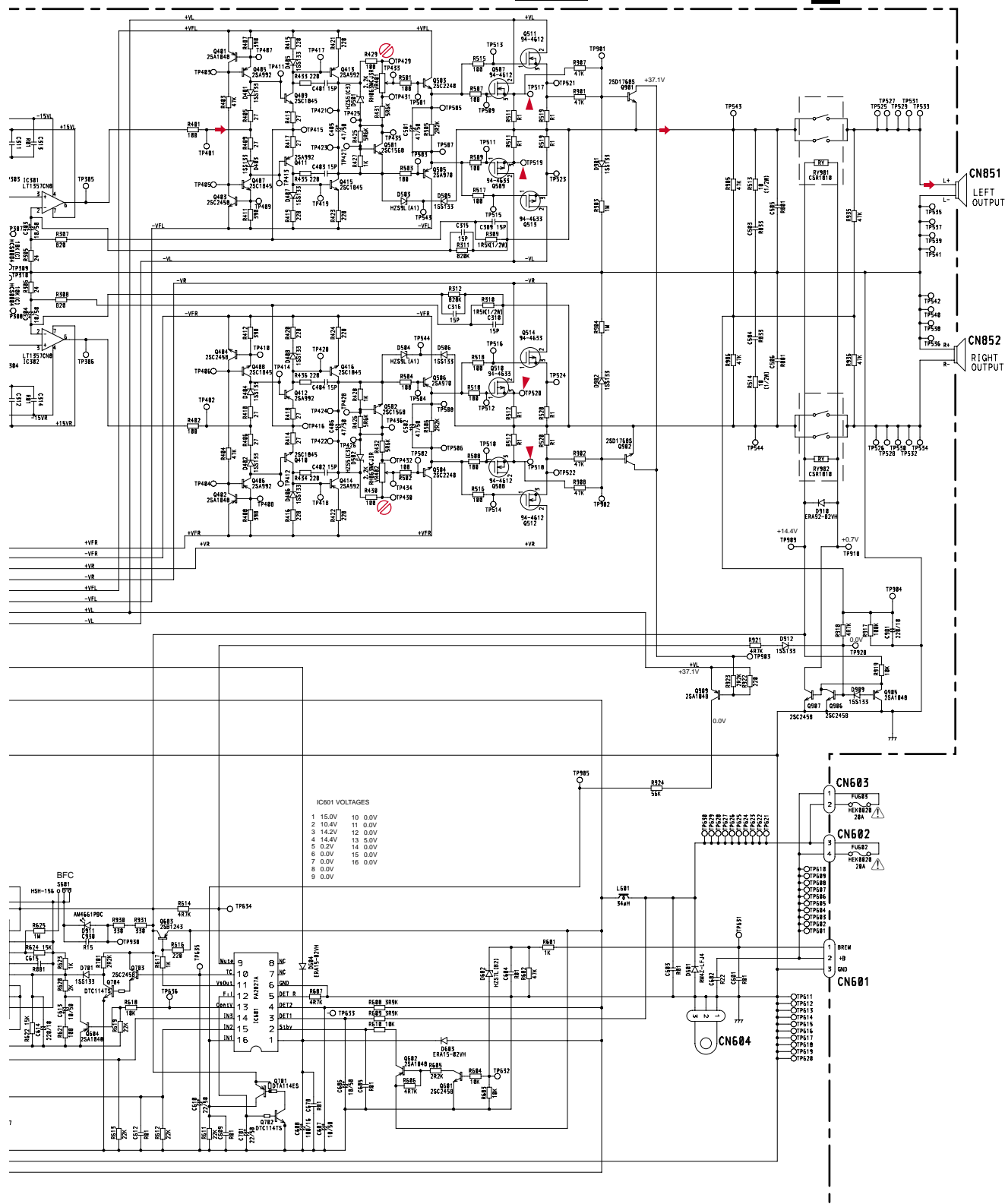
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A-a



A-b

A AMP UNIT



A

A-b

A

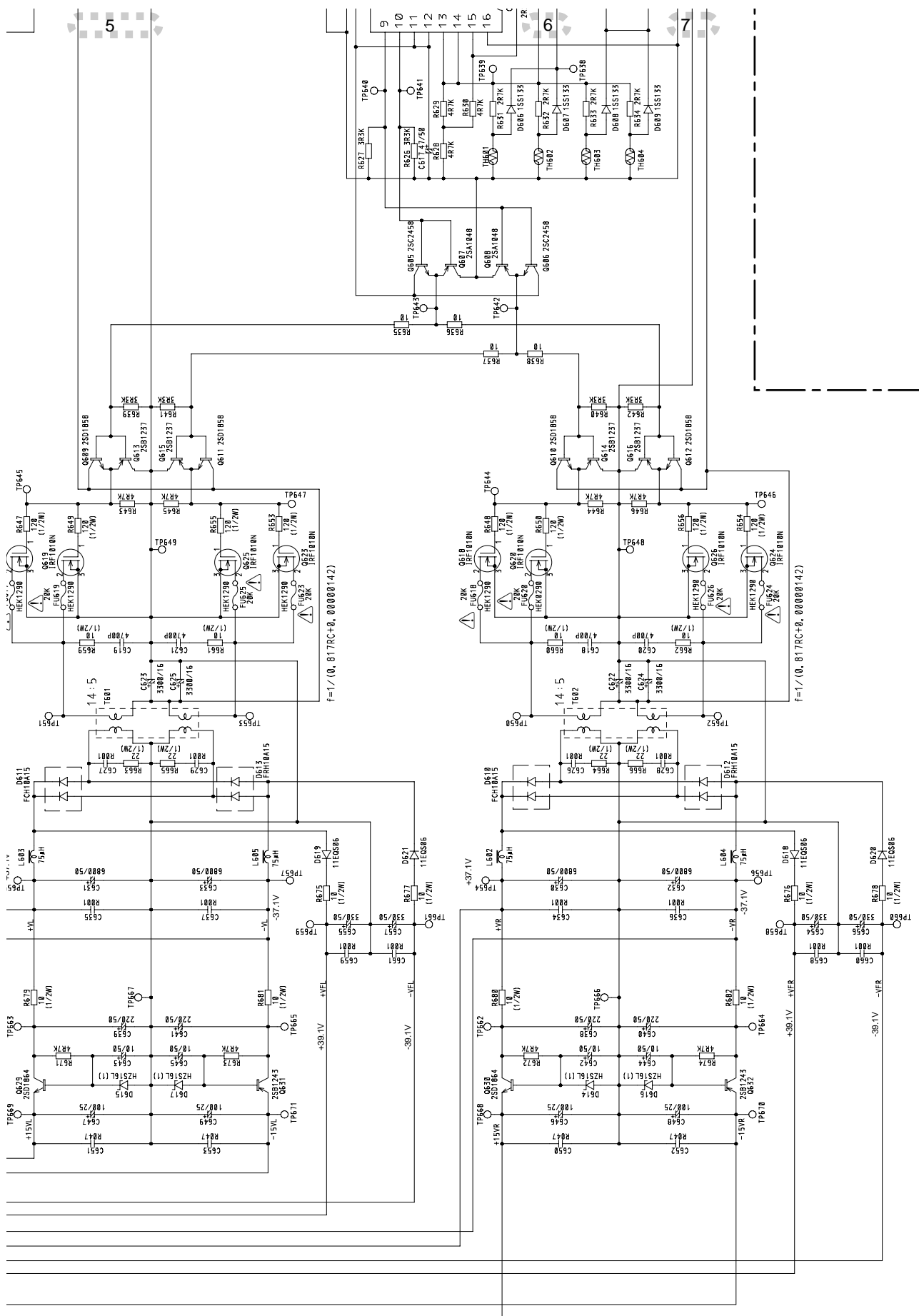
B

C

D

E

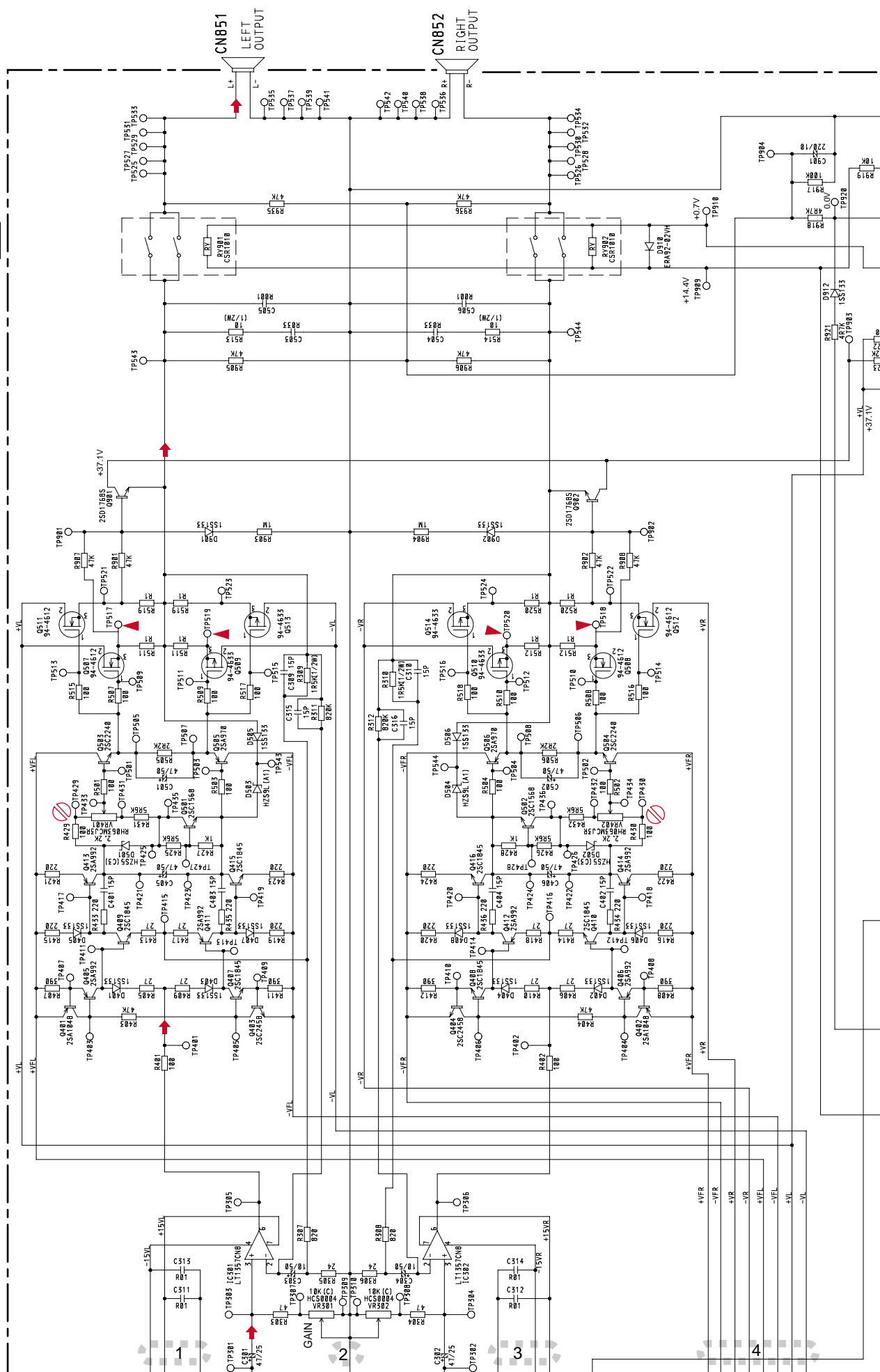
F

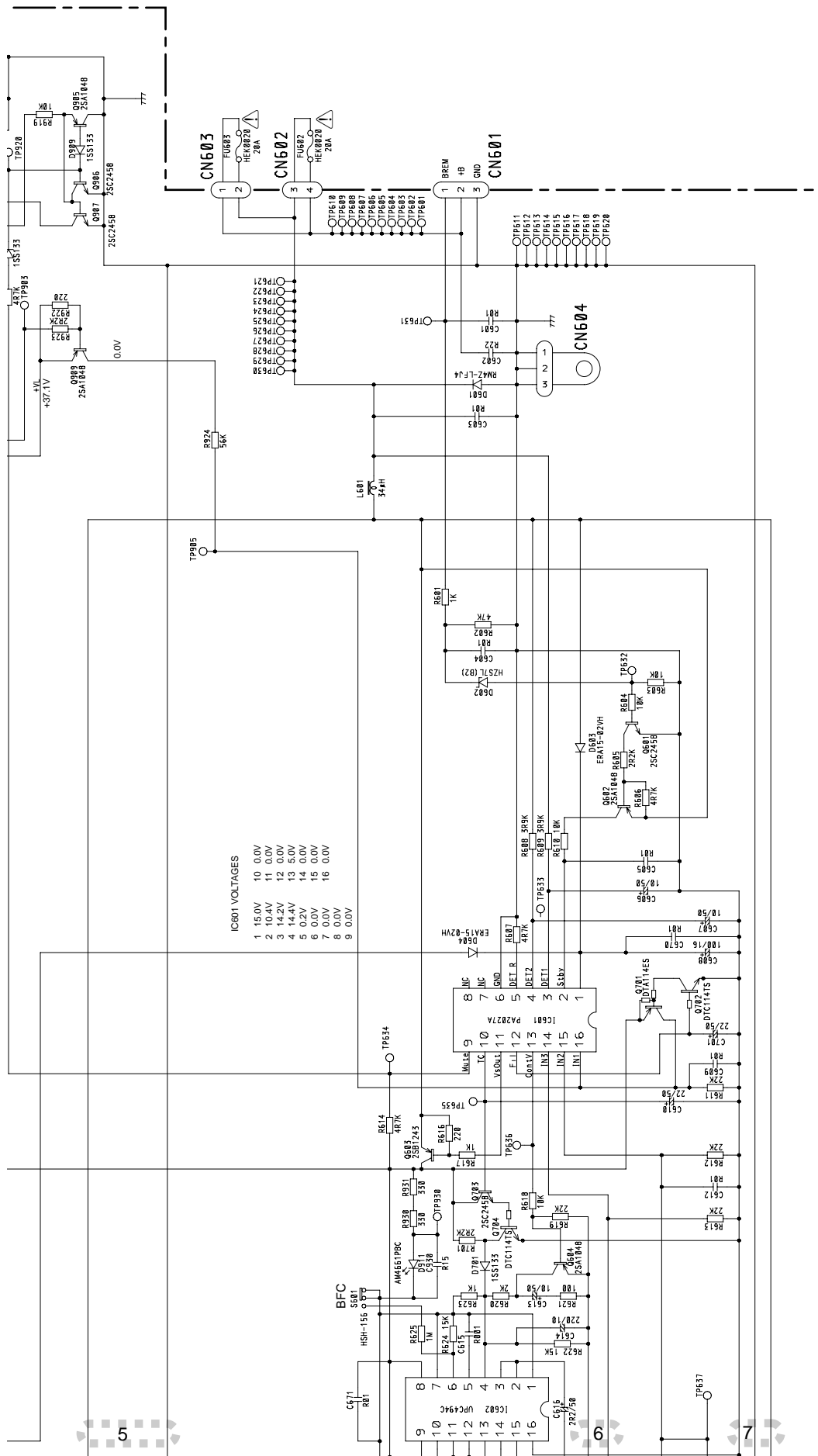


A

A-a	A-b
-----	-----

A-b





NOTE :

Symbol indicates a resistor.

No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.

No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :

2.2 → 2R2

0.022 → R022

The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

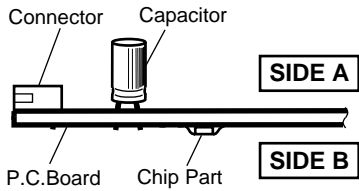
4. PCB CONNECTION DIAGRAM

4.1 AMP UNIT

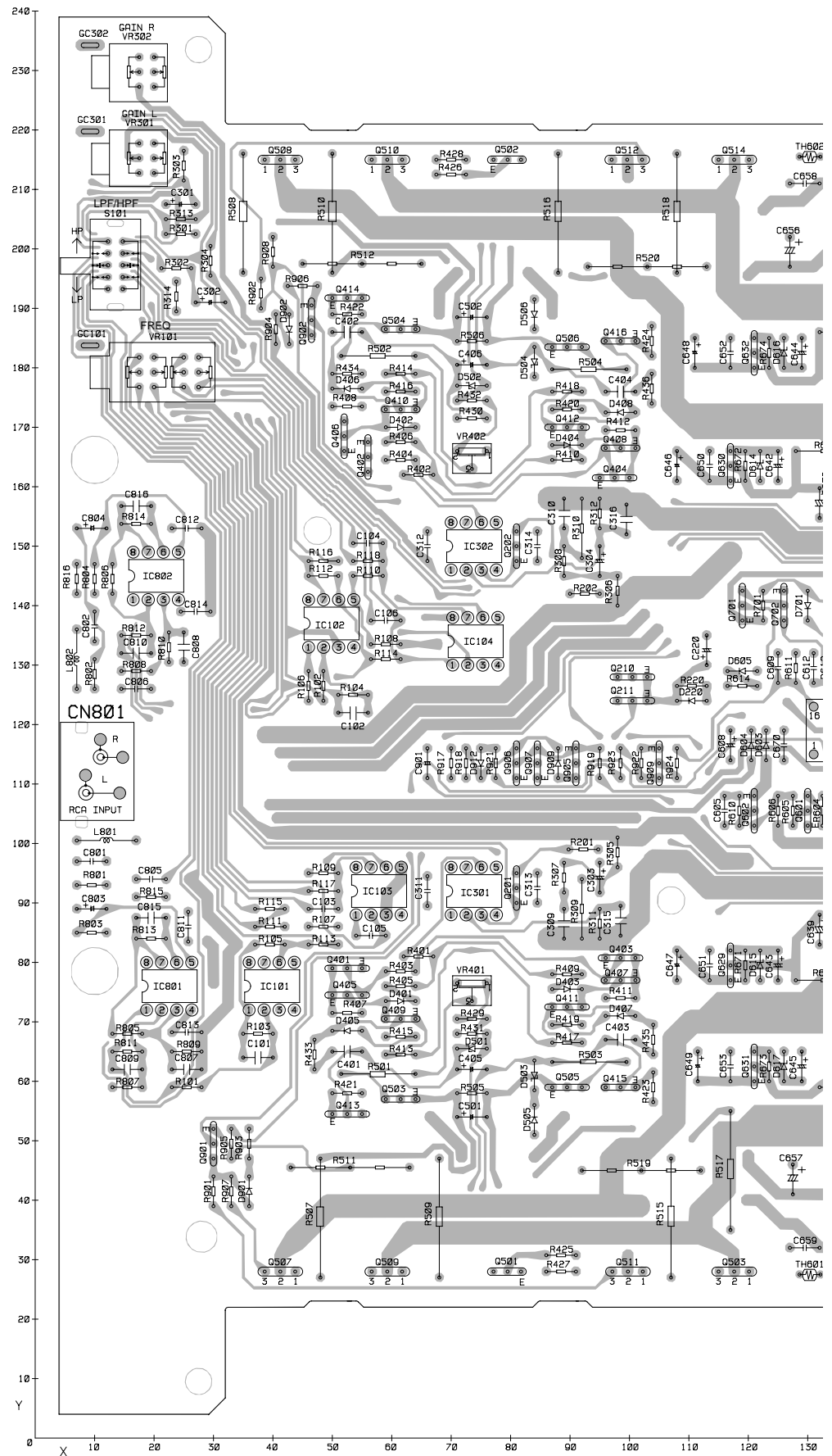
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
- For further information for respective destinations, be sure to check with the schematic diagram.

2. Viewpoint of PCB diagrams



A AMP UNIT



A **A** AMP UNIT

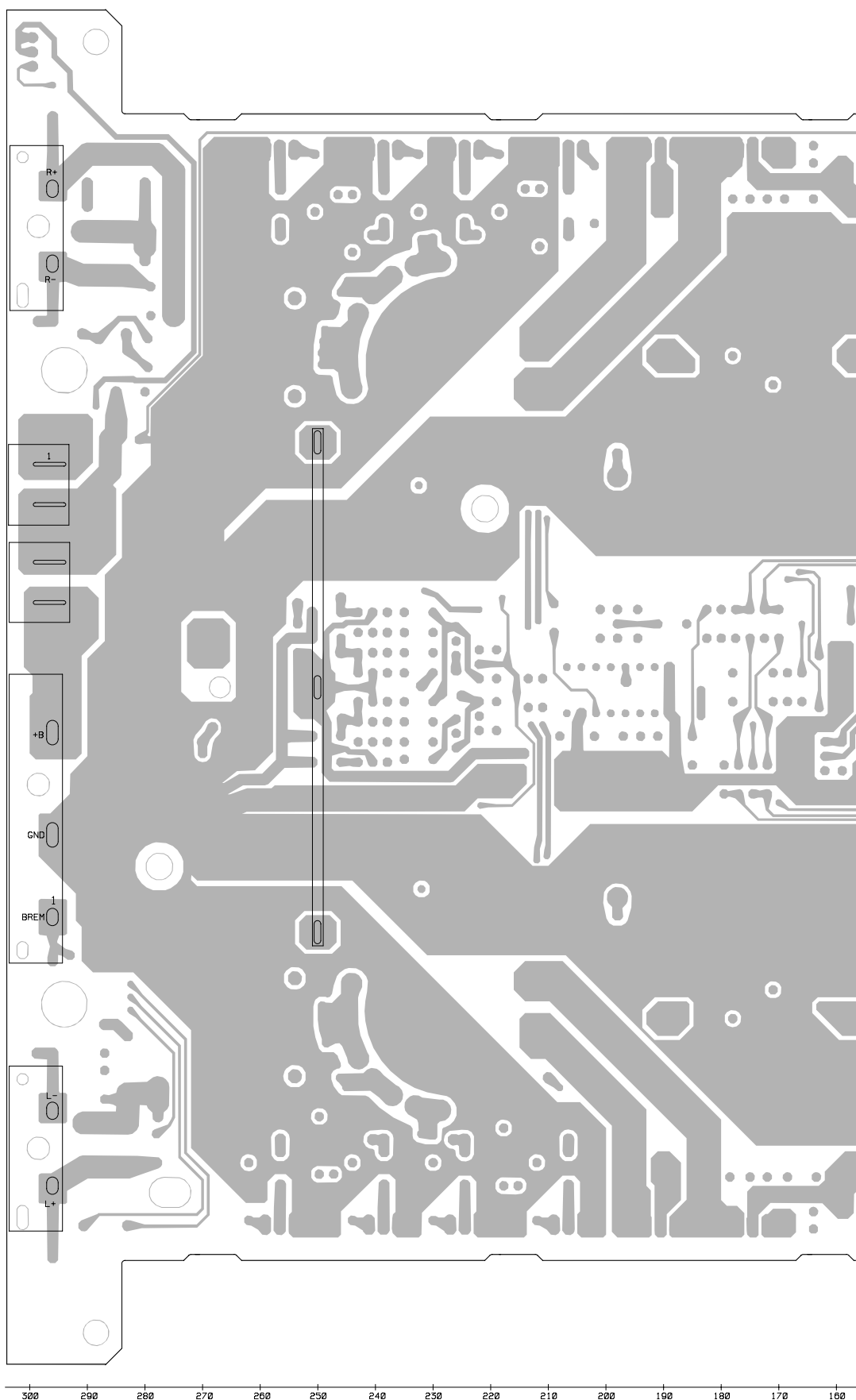
B

C

D

E

F



SIDE B

A

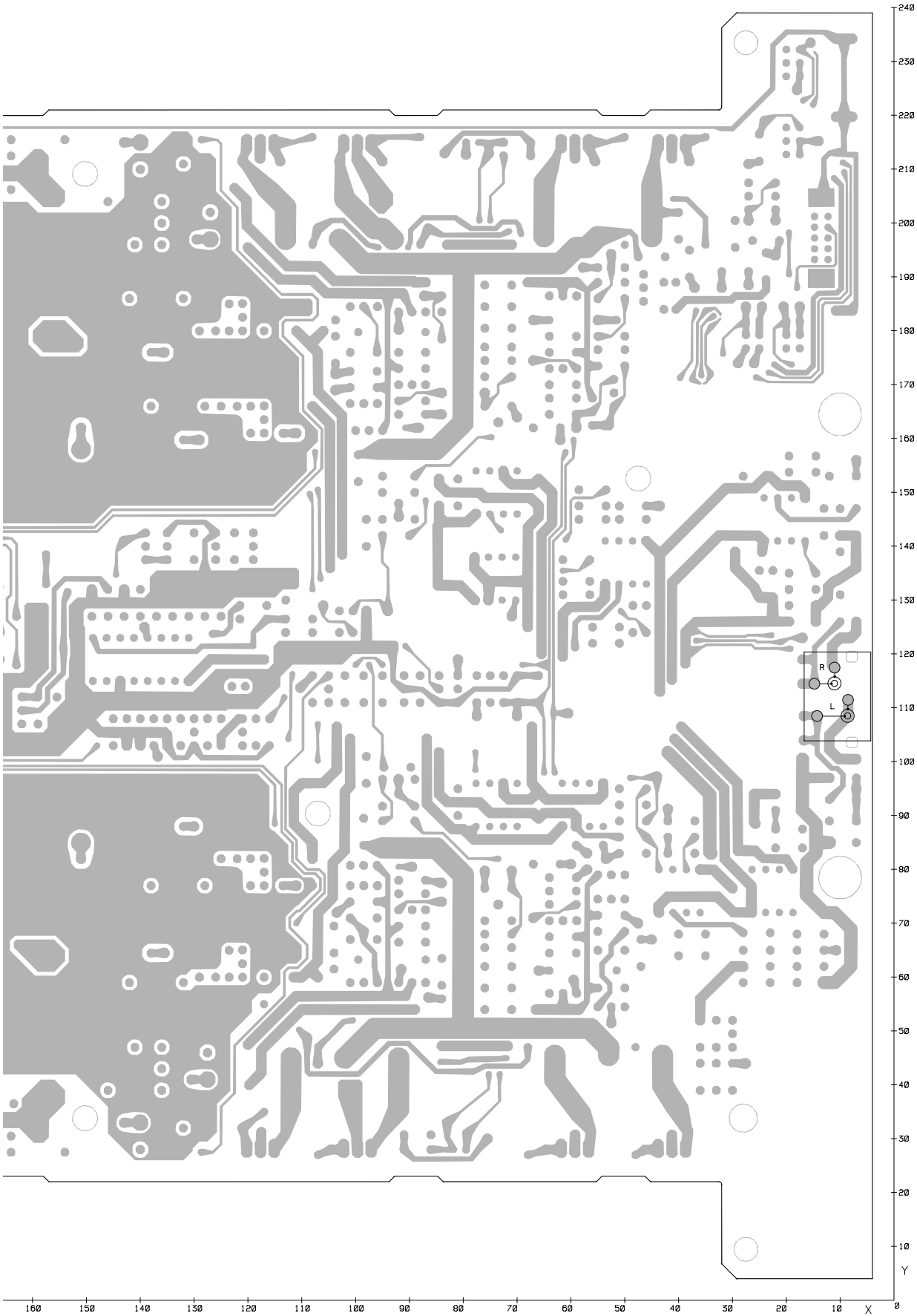
B

C

D

E

F



5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○○○○○J,RS1/○○○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

- The Δ mark found on some component parts indicates the importance of the safety factor of the part.
- Therefore, when replacing, be sure to use parts of identical designation.

Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
A Unit Number : HWH0217 Unit Name : Amp Unit		Q 606 (A,222,114) Transistor	2SC2458
MISCELLANEOUS		Q 607 (A,226,132) Transistor	2SA1048
IC 101 (A,36,72) IC	NJM2068D	Q 608 (A,226,116) Transistor	2SA1048
IC 102 (A,46,133) IC	NJM2068D	Q 609 (A,243,119) Transistor	2SD1858
IC 103 (A,54,88) IC	NJM2068D	Q 610 (A,243,124) Transistor	2SD1858
IC 104 (A,70,130) IC	NJM2068D	Q 611 (A,243,109) Transistor	2SD1858
IC 301 (A,70,88) IC	LT1357CN8	Q 612 (A,243,135) Transistor	2SD1858
IC 302 (A,70,146) IC	LT1357CN8	Q 613 (A,243,116) Transistor	2SB1237
IC 601 (A,131,115) IC	PA2027A	Q 614 (A,243,128) Transistor	2SB1237
IC 602 (A,189,117) IC	UPC494C	Q 615 (A,243,112) Transistor	2SB1237
IC 801 (A,19,72) IC	LT1358CN8	Q 616 (A,243,131) Transistor	2SB1237
IC 802 (A,17,141) IC	LT1358CN8	Q 617 (A,241,28) FET	IRF1010N
Q 401 (A,55,79) Transistor	2SA1048	Q 618 (A,236,215) FET	IRF1010N
Q 402 (A,56,168) Transistor	2SA1048	Q 619 (A,259,28) FET	IRF1010N
Q 403 (A,96,81) Transistor	2SC2458	Q 620 (A,254,215) FET	IRF1010N
Q 404 (A,95,162) Transistor	2SC2458	Q 623 (A,227,28) FET	IRF1010N
Q 405 (A,50,75) Transistor	2SA992	Q 624 (A,222,215) FET	IRF1010N
Q 406 (A,52,166) Transistor	2SA992	Q 625 (A,209,28) FET	IRF1010N
Q 407 (A,101,77) Transistor	2SC1845	Q 626 (A,204,215) FET	IRF1010N
Q 408 (A,101,167) Transistor	2SC1845	Q 629 (A,117,77) Transistor	2SD1864
Q 409 (A,64,71) Transistor	2SC1845	Q 630 (A,117,161) Transistor	2SD1864
Q 410 (A,64,173) Transistor	2SC1845	Q 631 (A,121,60) Transistor	2SB1243
Q 411 (A,87,73) Transistor	2SA992	Q 632 (A,121,180) Transistor	2SB1243
Q 412 (A,87,170) Transistor	2SA992	Q 701 (A,119,138) Transistor	DTA114ES
Q 413 (A,50,55) Transistor	2SA992	Q 702 (A,126,143) Transistor	DTC114TS
Q 414 (A,50,192) Transistor	2SA992	Q 703 (A,139,138) Transistor	2SC2458
Q 415 (A,101,59) Transistor	2SC1845	Q 704 (A,135,143) Transistor	DTC114TS
Q 416 (A,101,185) Transistor	2SC1845	Q 901 (A,30,52) Transistor	2SD1768S
Q 501 (A,82,28) Transistor	2SC1568	Q 902 (A,47,191) Transistor	2SD1768S
Q 502 (A,77,215) Transistor	2SC1568	Q 905 (A,91,116) Transistor	2SA1048
Q 503 (A,64,57) Transistor	2SC2240	Q 906 (A,81,111) Transistor	2SC2458
Q 504 (A,64,187) Transistor	2SC2240	Q 907 (A,85,111) Transistor	2SC2458
Q 505 (A,87,59) Transistor	2SA970	Q 909 (A,105,116) Transistor	2SA1048
Q 506 (A,87,184) Transistor	2SA970	D 401 (A,59,74) Diode	1SS133
Q 507 (A,44,28) FET	94-4612	D 402 (A,59,170) Diode	1SS133
Q 508 (A,39,215) FET	94-4612	D 403 (A,87,76) Diode	1SS133
Q 509 (A,62,28) FET	94-4633	D 404 (A,87,167) Diode	1SS133
Q 510 (A,57,215) FET	94-4633	D 405 (A,55,69) Diode	1SS133
Q 511 (A,102,28) FET	94-4612	D 406 (A,55,177) Diode	1SS133
Q 512 (A,97,215) FET	94-4612	D 407 (A,101,71) Diode	1SS133
Q 513 (A,120,28) FET	94-4633	D 408 (A,101,173) Diode	1SS133
Q 514 (A,115,215) FET	94-4633	D 501 (A,76,66) Diode	HZS5(C3)
Q 601 (A,130,103) Transistor	2SC2458	D 502 (A,76,177) Diode	HZS5(C3)
Q 602 (A,121,108) Transistor	2SA1048	D 503 (A,84,64) Diode	HZS9L(A1)
Q 603 (A,162,107) Transistor	2SB1243	D 504 (A,84,184) Diode	HZS9L(A1)
Q 604 (A,198,135) Transistor	2SA1048	D 505 (A,84,51) Diode	1SS133
Q 605 (A,222,123) Transistor	2SC2458	D 506 (A,84,192) Diode	1SS133
		D 601 (A,269,156) Diode	RM4Z-LFJ4
		D 602 (A,138,103) Diode	HZS7L(B2)
		D 603 (A,123,114) Diode	ERA15-02VH

====Circuit Symbol and No.===Part Name				Part No.	====Circuit Symbol and No.===Part Name				Part No.	
D	604	(A,121,114)	Diode	ERA15-02VH	R	111	(A,37,86)		RD1/4PU103J	A
D	605	(A,122,129)		RD1/4PU0R0J	R	112	(A,51,145)		RD1/4PU103J	
D	606	(A,172,103)	Diode	1SS133	R	113	(A,46,83)		RD1/4PU103J	
D	607	(A,170,135)	Diode	1SS133	R	114	(A,57,131)		RD1/4PU103J	
D	608	(A,177,103)	Diode	1SS133	R	115	(A,42,89)		RD1/4PU822J	
D	609	(A,175,135)	Diode	1SS133	R	116	(A,51,148)		RD1/4PU822J	B
D	610	(A,172,215)	Diode	FCH10A15	R	117	(A,51,92)		RD1/4PU822J	
D	611	(A,177,28)	Diode	FCH10A15	R	118	(A,54,148)		RD1/4PU822J	
D	612	(A,188,215)	Diode	FRH10A15	R	301	(A,22,203)		RD1/4PU222J	
D	613	(A,193,28)	Diode	FRH10A15	R	302	(A,21,197)		RD1/4PU222J	
D	614	(A,122,161)	Diode	HZS16L(1)	R	303	(A,25,217)		RD1/4PU470J	B
D	615	(A,122,77)	Diode	HZS16L(1)	R	304	(A,30,196)		RD1/4PU470J	
D	616	(A,126,180)	Diode	HZS16L(1)	R	305	(A,98,101)		RD1/4PU240J	
D	617	(A,126,60)	Diode	HZS16L(1)	R	306	(A,98,145)		RD1/4PU240J	
D	618	(A,159,213)	Diode	11EQS06	R	307	(A,89,97)		RD1/4PU821J	
D	619	(A,159,31)	Diode	11EQS06	R	308	(A,89,145)		RD1/4PU821J	B
D	620	(A,136,196)	Diode	11EQS06	R	309	(A,92,94)		RS1/2PMF152J	
D	621	(A,136,47)	Diode	11EQS06	R	310	(A,92,148)		RS1/2PMF152J	
D	701	(A,130,143)	Diode	1SS133	R	311	(A,95,89)		RD1/4PU824J	
D	901	(A,36,39)	Diode	1SS133	R	312	(A,95,153)		RD1/4PU824J	
D	902	(A,43,189)	Diode	1SS133	R	313	(A,22,205)		RD1/4PU222J	B
D	909	(A,88,111)	Diode	1SS133	R	314	(A,24,195)		RD1/4PU222J	
D	910	(A,280,177)	Diode	ERA92-02VH	R	401	(A,62,81)		RD1/4PU101J	
D	911	(A,268,115)	LED	AM4661PBC	R	402	(A,62,162)		RD1/4PU101J	
D	912	(A,75,116)	Diode	1SS133	R	403	(A,59,79)		RD1/4PU473J	
L	601	(A,269,127)	Choke Coil 34μH	HTH0018	R	404	(A,59,165)		RD1/4PU473J	C
L	602	(A,157,179)	Choke Coil 75μH	HTH0019	R	405	(A,59,76)		RD1/4PU270J	
L	603	(A,157,64)	Choke Coil 75μH	HTH0019	R	406	(A,59,168)		RD1/4PU270J	
L	604	(A,190,179)	Choke Coil 75μH	HTH0019	R	407	(A,55,72)		RD1/4PU391J	
L	605	(A,190,64)	Choke Coil 75μH	HTH0019	R	408	(A,55,174)		RD1/4PU391J	
L	801	(A,7,101)	Ferri-Inductor	CTF1007	R	409	(A,87,78)		RD1/4PU270J	B
L	802	(A,7,126)	Ferri-Inductor	CTF1007	R	410	(A,87,165)		RD1/4PU270J	
T	601	(A,228,65)	Ttransformer	HTT0030	R	411	(A,101,74)		RD1/4PU391J	
T	602	(A,228,179)	Ttransformer	HTT0030	R	412	(A,101,170)		RD1/4PU391J	
RY	901	(A,283,38)	Relay	CSR1010	R	413	(A,59,65)		RD1/4PU270J	
RY	902	(A,283,193)	Relay	CSR1010	R	414	(A,59,179)		RD1/4PU270J	D
TH	601	(A,132,28)	Thermistor	HGX0002	R	415	(A,59,68)		RD1/4PU221J	
TH	602	(A,129,216)	Thermistor	HGX0002	R	416	(A,59,176)		RD1/4PU221J	
TH	603	(A,232,87)	Thermistor	HGX0001	R	417	(A,87,67)		RD1/4PU270J	
TH	604	(A,236,158)	Thermistor	HGX0001	R	418	(A,87,176)		RD1/4PU270J	
S	101	(A,12,201)	Switch(LPF/HPF)	CSH1029	R	419	(A,87,70)		RD1/4PU221J	D
S	601	(A,300,229)	Switch(BFC)	HSN-156	R	420	(A,87,173)		RD1/4PU221J	
VR	101	(A,18,182)	Variable Resistor 20kΩ(E)	HCS0005	R	421	(A,55,58)		RD1/4PU221J	
VR	301	(A,18,218)	Variable Resistor 10kΩ(C)	HCS0004	R	422	(A,55,189)		RD1/4PU221J	
VR	302	(A,18,232)	Variable Resistor 10kΩ(C)	HCS0004	R	423	(A,104,62)		RD1/4PU221J	
VR	401	(A,76,77)	Semi Fixed Resistor 2.2kΩ	RH063MCJ3R	R	424	(A,104,182)		RD1/4PU221J	B
VR	402	(A,76,166)	Semi Fixed Resistor 2.2kΩ	RH063MCJ3R	R	425	(A,86,31)		RD1/4PU562J	
⚠	FU	602	Fuse 20A	HEK0020	R	426	(A,73,213)		RD1/4PU562J	E
⚠	FU	603	Fuse 20A	HEK0020	R	427	(A,91,28)		RD1/4PU102J	
⚠	FU	617	(A,240,35) Fuse 20A	HEK1290	R	428	(A,68,215)		RD1/4PU102J	
⚠	FU	618	(A,240,203) Fuse 20A	HEK1290	R	429	(A,76,71)		RD1/4PU101J	
⚠	FU	619	(A,257,35) Fuse 20A	HEK1290	R	430	(A,76,172)		RD1/4PU101J	
⚠	FU	620	(A,257,203) Fuse 20A	HEK1290	R	431	(A,71,68)		RD1/4PU562J	E
⚠	FU	623	(A,225,35) Fuse 20A	HEK1290	R	432	(A,76,175)		RD1/4PU562J	
⚠	FU	624	(A,225,203) Fuse 20A	HEK1290	R	433	(A,47,62)		RD1/4PU221J	
⚠	FU	625	(A,206,35) Fuse 20A	HEK1290	R	434	(A,50,179)		RD1/4PU221J	
⚠	FU	626	(A,206,203) Fuse 20A	HEK1290	R	435	(A,104,65)		RD1/4PU221J	
RESISTORS					R	436	(A,104,174)		RD1/4PU221J	B
R	101	(A,23,59)		RD1/4PU103J	R	501	(A,64,61) 100Ω		CCN1096	
R	102	(A,49,124)		RD1/4PU103J	R	502	(A,64,182) 100Ω		CCN1096	
R	103	(A,40,68)		RD1/4PU103J	R	503	(A,87,63) 100Ω		CCN1096	
R	104	(A,56,125)		RD1/4PU103J	R	504	(A,87,180) 100Ω		CCN1096	
R	105	(A,37,83)		RD1/4PU103J	R	505	(A,71,58)		RD1/4PU222J	F
R	106	(A,46,129)		RD1/4PU103J	R	506	(A,71,185)		RD1/4PU222J	
R	107	(A,51,86)		RD1/4PU472J	R	507	(A,48,47) 100Ω		HCN1141	
R	108	(A,57,134)		RD1/4PU472J						
R	109	(A,46,95)		RD1/4PU562J						
R	110	(A,54,145)		RD1/4PU562J						

A	====Circuit Symbol and No.==Part Name			Part No.	====Circuit Symbol and No.==Part Name			Part No.
	---	---	-----		---	---	-----	
	R	508	(A,35,196) 100Ω	HCN1141	R	656	(A,202,212)	RS1/2PMF121J
	R	509	(A,68,47) 100Ω	HCN1141	R	659	(A,250,47)	RS1/2PMF100J
	R	510	(A,50,196) 100Ω	HCN1141	R	660	(A,244,197)	RS1/2PMF100J
	R	511	(A,43,46) 0.1Ω	HCN1143	R	661	(A,218,35)	RS1/2PMF100J
	R	512	(A,45,198) 0.1Ω	HCN1143	R	662	(A,212,208)	RS1/2PMF100J
	R	513	(A,283,61)	RS1/2PMF100J	R	663	(A,172,47)	RS1/2PMF220J
	R	514	(A,290,205)	RS1/2PMF100J	R	664	(A,175,196)	RS1/2PMF220J
	R	515	(A,107,47) 100Ω	HCN1141	R	665	(A,175,37)	RS1/2PMF220J
	R	516	(A,88,196) 100Ω	HCN1141	R	666	(A,172,206)	RS1/2PMF220J
	R	517	(A,117,55) 100Ω	HCN1141	R	671	(A,120,82)	RD1/4PU472J
B	R	518	(A,108,196) 100Ω	HCN1141	R	672	(A,120,166)	RD1/4PU472J
	R	519	(A,92,45) 0.1Ω	HCN1143	R	673	(A,124,60)	RD1/4PU472J
	R	520	(A,93,197) 0.1Ω	HCN1143	R	674	(A,124,180)	RD1/4PU472J
	R	601	(A,145,103)	RD1/4PU102J	R	675	(A,154,28)	RS1/2PMF100J
	R	602	(A,143,103)	RD1/4PU473J	R	676	(A,154,216)	RS1/2PMF100J
	R	603	(A,135,103)	RD1/4PU103J	R	677	(A,136,39)	RS1/2PMF100J
	R	604	(A,133,103)	RD1/4PU103J	R	678	(A,136,204)	RS1/2PMF100J
	R	605	(A,128,108)	RD1/4PU222J	R	679	(A,128,77)	RS1/2PMF100J
	R	606	(A,125,103)	RD1/4PU472J	R	680	(A,128,166)	RS1/2PMF100J
	R	607	(A,156,112)	RD1/4PU472J	R	681	(A,132,59)	RS1/2PMF100J
	R	608	(A,254,133)	RD1/4PU392J	R	682	(A,132,186)	RS1/2PMF100J
	R	609	(A,280,173)	RD1/4PU392J	R	701	(A,123,138)	RD1/4PU222J
	R	610	(A,119,108)	RD1/4PU103J	R	801	(A,12,93)	RD1/4PU471J
	R	611	(A,128,132)	RD1/4PU223J	R	802	(A,10,126)	RD1/4PU471J
	R	612	(A,134,132)	RD1/4PU223J	R	803	(A,12,85)	RD1/4PU223J
C	R	613	(A,137,132)	RD1/4PU223J	R	804	(A,10,147)	RD1/4PU223J
	R	614	(A,122,127)	RD1/4PU472J	R	805	(A,13,68)	RN1/4PC1002D
	R	616	(A,159,112)	RD1/4PU221J	R	806	(A,13,147)	RN1/4PC1002D
	R	617	(A,146,127)	RD1/4PU102J	R	807	(A,13,59)	RN1/4PC1002D
	R	618	(A,140,132)	RD1/4PU103J	R	808	(A,20,129)	RN1/4PC1002D
	R	619	(A,201,130)	RD1/4PU223J	R	809	(A,28,65)	RN1/4PC1002D
	R	620	(A,183,130)	RD1/4PU202J	R	810	(A,23,136)	RN1/4PC1002D
	R	621	(A,195,130)	RD1/4PU101J	R	811	(A,18,65)	RN1/4PC1002D
	R	622	(A,180,130)	RD1/4PU153J	R	812	(A,20,135)	RN1/4PC1002D
	R	623	(A,191,113)	RD1/4PU102J	R	813	(A,22,84)	RD1/4PU102J
	R	624	(A,197,113)	RD1/4PU153J	R	814	(A,20,154)	RD1/4PU102J
	R	625	(A,209,131)	RD1/4PU105J	R	815	(A,17,91)	RD1/4PU242J
	R	626	(A,219,128)	RD1/4PU332J	R	816	(A,7,147)	RD1/4PU242J
	R	627	(A,219,114)	RD1/4PU332J	R	901	(A,30,39)	RD1/4PU473J
	R	628	(A,169,124)	RD1/4PU472J	R	902	(A,38,195)	RD1/4PU473J
D	R	629	(A,166,119)	RD1/4PU472J	R	903	(A,36,52)	RD1/4PU105J
	R	630	(A,171,119)	RD1/4PU472J	R	904	(A,41,184)	RD1/4PU105J
	R	631	(A,175,103)	RD1/4PU272J	R	905	(A,33,52)	RD1/4PU473J
	R	632	(A,173,135)	RD1/4PU272J	R	906	(A,43,194)	RD1/4PU473J
	R	633	(A,180,103)	RD1/4PU272J	R	907	(A,33,39)	RD1/4PU473J
	R	634	(A,178,135)	RD1/4PU272J	R	908	(A,40,202)	RD1/4PU473J
	R	635	(A,230,119)	RD1/4PU100J	R	917	(A,70,116)	RD1/4PU104J
	R	636	(A,235,135)	RD1/4PU100J	R	918	(A,73,116)	RD1/4PU472J
	R	637	(A,230,109)	RD1/4PU100J	R	919	(A,95,116)	RD1/4PU103J
	R	638	(A,235,124)	RD1/4PU100J	R	921	(A,78,116)	RD1/4PU472J
	R	639	(A,235,116)	RD1/4PU332J	R	922	(A,102,111)	RD1/4PU221J
	R	640	(A,235,128)	RD1/4PU332J	R	923	(A,99,116)	RD1/4PU222J
	R	641	(A,230,112)	RD1/4PU332J	R	924	(A,108,116)	RD1/4PU563J
	R	642	(A,230,131)	RD1/4PU332J	R	930	(A,214,118)	RD1/4PU331J
	R	643	(A,251,113)	RD1/4PU472J	R	931	(A,211,123)	RD1/4PU331J
E	R	644	(A,251,130)	RD1/4PU472J	R	935	(A,278,39)	RD1/4PU473J
	R	645	(A,246,109)	RD1/4PU472J	R	936	(A,279,186)	RD1/4PU473J
	R	646	(A,246,135)	RD1/4PU472J	CAPACITORS			
	R	647	(A,244,29)	RS1/2PMF121J	C	101	(A,40,64) 33pF	HCF0004
	R	648	(A,233,214)	RS1/2PMF121J	C	102	(A,56,122) 33pF	HCF0004
	R	649	(A,262,29)	RS1/2PMF121J	C	103	(A,46,89)	CFTNA154J50
	R	650	(A,251,214)	RS1/2PMF121J	C	104	(A,54,151)	CFTNA154J50
	R	653	(A,230,29)	RS1/2PMF121J	C	105	(A,59,85)	CFTNA154J50
	R	654	(A,219,214)	RS1/2PMF121J				
	R	655	(A,212,29)	RS1/2PMF121J				
F								

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.	
C 106 (A,57,138)	CFTNA154J50	C 642 (A,125,166)	CEAT100M50	A
C 301 (A,22,208) 47μF/25V	HCH0034	C 643 (A,125,82)	CEAT100M50	
C 302 (A,27,191) 47μF/25V	HCH0034	C 644 (A,129,185)	CEAT100M50	
C 303 (A,95,97)	CEAT100M50	C 645 (A,129,65)	CEAT100M50	
C 304 (A,95,150)	CEAT100M50	C 646 (A,108,166) 100μF/25V	HCH0030	
C 309 (A,89,89) 15pF	HCF0003	C 647 (A,108,82) 100μF/25V	HCH0030	
C 310 (A,89,153) 15pF	HCF0003	C 648 (A,111,185) 100μF/25V	HCH0030	
C 311 (A,66,90)	CFTNA103J50	C 649 (A,112,65) 100μF/25V	HCH0030	
C 312 (A,66,148)	CFTNA103J50	C 650 (A,114,166)	CFTNA473J50	
C 313 (A,85,95)	CFTNA103J50	C 651 (A,114,82)	CFTNA473J50	
C 314 (A,85,153)	CFTNA103J50	C 652 (A,117,180)	CFTNA473J50	
C 315 (A,99,90) 15pF	HCF0003	C 653 (A,117,60)	CFTNA473J50	
C 316 (A,100,157) 15pF	HCF0003	C 654 (A,140,215) 330μF/50V	HCH1552	B
C 401 (A,50,65) 15pF	HCF0003	C 655 (A,140,33) 330μF/50V	HCH1552	
C 402 (A,50,186) 15pF	HCF0003	C 656 (A,127,202) 330μF/50V	HCH1552	
C 403 (A,101,67) 15pF	HCF0003	C 657 (A,128,46) 330μF/50V	HCH1552	
C 404 (A,101,176) 15pF	HCF0003	C 658 (A,127,211)	CQPA102G2A	
C 405 (A,71,62)	CEAT470M50	C 659 (A,127,32)	CQPA102G2A	
C 406 (A,71,181)	CEAT470M50	C 660 (A,136,200)	CQPA102G2A	
C 501 (A,71,54)	CEAT470M50	C 661 (A,136,43)	CQPA102G2A	
C 502 (A,71,189)	CEAT470M50	C 670 (A,126,119)	CFTNA103J50	
C 503 (A,287,58)	CFTNA333J50	C 671 (A,208,113)	CFTNA103J50	
C 504 (A,290,214)	CFTNA333J50	C 701 (A,143,127)	CEAT220M50	
C 505 (A,287,55)	CQPA102G2A	C 801 (A,12,97)	CQPA471G2A	
C 506 (A,280,209)	CQPA102G2A	C 802 (A,10,139)	CQPA471G2A	
C 601 (A,288,75)	CFTNA103J50	C 803 (A,7,89) 10μF/50V	HCH1553	C
C 602 (A,292,117)	CFTNA224J50	C 804 (A,7,153) 10μF/50V	HCH1553	
C 603 (A,286,165)	CQMA103J50	C 805 (A,22,94)	CQMA472J50	
C 604 (A,140,103)	CFTNA103J50	C 806 (A,15,126)	CQMA472J50	
C 605 (A,116,103)	CFTNA103J50	C 807 (A,28,62) 33pF	HCF0004	
C 606 (A,163,127)	CEAT100M50	C 808 (A,25,136) 33pF	HCF0004	
C 607 (A,163,118)	CEAT100M50	C 809 (A,18,62) 33pF	HCF0004	
C 608 (A,117,119)	CEAT101M16	C 810 (A,20,132) 33pF	HCF0004	
C 609 (A,125,132)	CFTNA103J50	C 811 (A,26,84)	CFTNA103J50	
C 610 (A,149,127)	CEAT220M50	C 812 (A,23,153)	CFTNA103J50	
C 612 (A,131,132)	CFTNA103J50	C 813 (A,23,68)	CFTNA103J50	
C 613 (A,186,133)	CEAT100M50	C 814 (A,25,139)	CFTNA103J50	
C 614 (A,185,108) 220μF/10V	HCH0012	C 815 (A,22,88) 33pF	HCF0004	
C 615 (A,194,113)	CQMA102J50	C 816 (A,20,157) 33pF	HCF0004	
C 616 (A,178,119)	CEAT2R2M50	C 901 (A,66,116) 220μF/10V	HCH0012	D
C 617 (A,202,113)	CEAT470M50	C 930 (A,265,110)	CFTNA154J50	
C 618 (A,247,212)	CQMA472J50			
C 619 (A,247,32)	CQMA472J50			
C 620 (A,214,213)	CQMA472J50			
C 621 (A,215,30)	CQMA472J50			
C 622 (A,254,189) 3300μF/16V	HCH0005			
C 623 (A,254,54) 3300μF/16V	HCH0005			
C 624 (A,254,172) 3300μF/16V	HCH0005			
C 625 (A,254,71) 3300μF/16V	HCH0005			
C 626 (A,178,206)	CQMA102J50			
C 627 (A,169,37)	CQMA102J50			
C 628 (A,164,206)	CQMA102J50			
C 629 (A,184,37)	CQMA102J50			E
C 630 (A,151,158) 6800μF/50V	HCH1550			
C 631 (A,151,85) 6800μF/50V	HCH1550			
C 632 (A,188,158) 6800μF/50V	HCH1550			
C 633 (A,188,85) 6800μF/50V	HCH1550			
C 634 (A,171,174)	CQPA102G2A			
C 635 (A,171,69)	CQPA102G2A			
C 636 (A,178,174)	CQPA102G2A			
C 637 (A,178,69)	CQPA102G2A			
C 638 (A,132,160)	CEAT221M50			
C 639 (A,132,88)	CEAT221M50			
C 640 (A,138,181)	CEAT221M50			
C 641 (A,138,70)	CEAT221M50			F

A

6. ADJUSTMENT



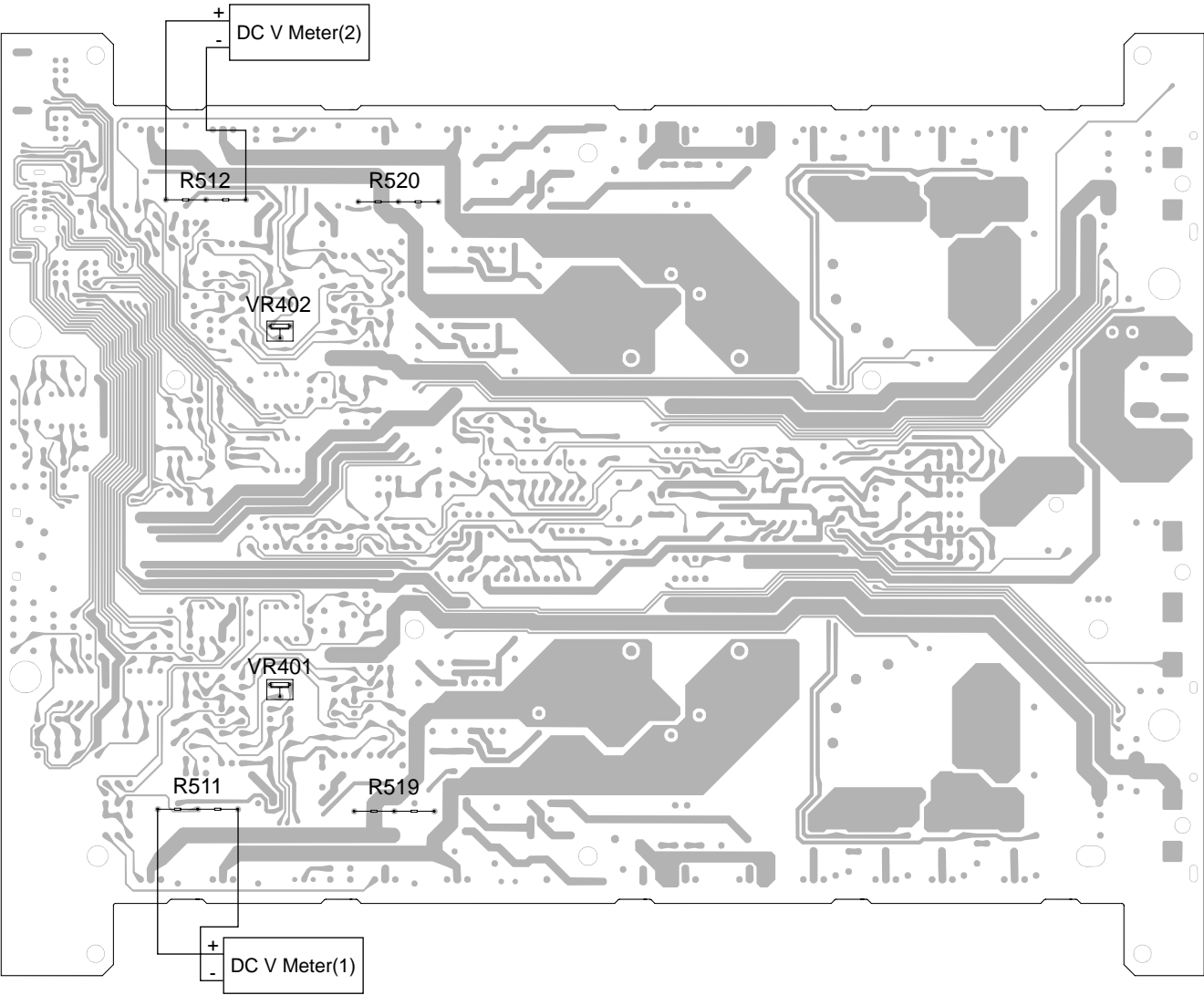
● Connection Diagram

SIDE A

B

C

D



E

Idling Current Adjustment

No.	Adjustment Point	Adjustment Method
1	VR401(Lch)	DC V Meter(1) : $7.0 \pm 1.0\text{mV}$
2	VR402(Rch)	DC V Meter(2) : $7.0 \pm 1.0\text{mV}$

F

- Note:
- 1. The idle current should be set when the amplifier has not been in operation for a long time and also should be set when at room temperature.
 - 2. PCB assembly must be mounted in the heatsink and all power transistors must be attached to the heatsink using the proper fasteners.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (Fig.1)

- 1** Remove the screw.
- 2** Remove the six screws.
- 3** Remove the seven screws and then remove the Case.

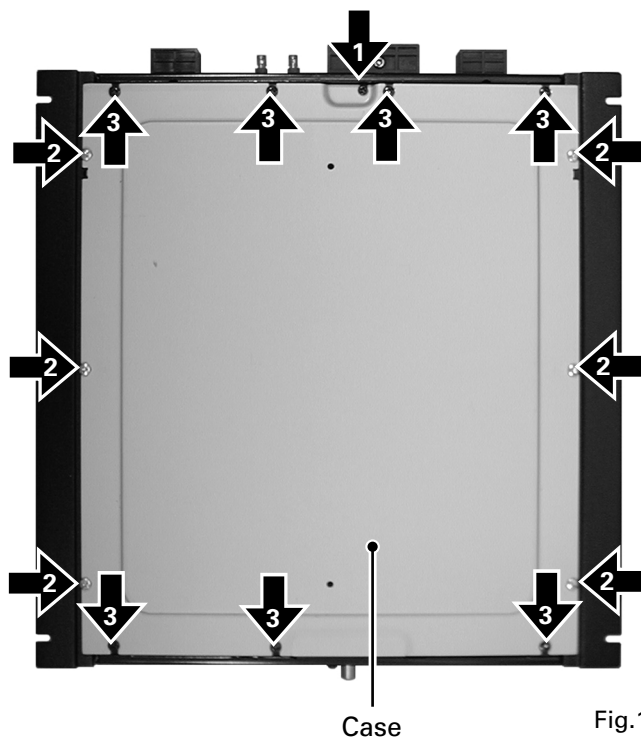


Fig.1

● Removing the Amp Unit (Fig.2)

- 1** Remove the sixteen screws.
- 2** Remove the four screws.
- 3** Remove the ten screws and then remove the Amp Unit.

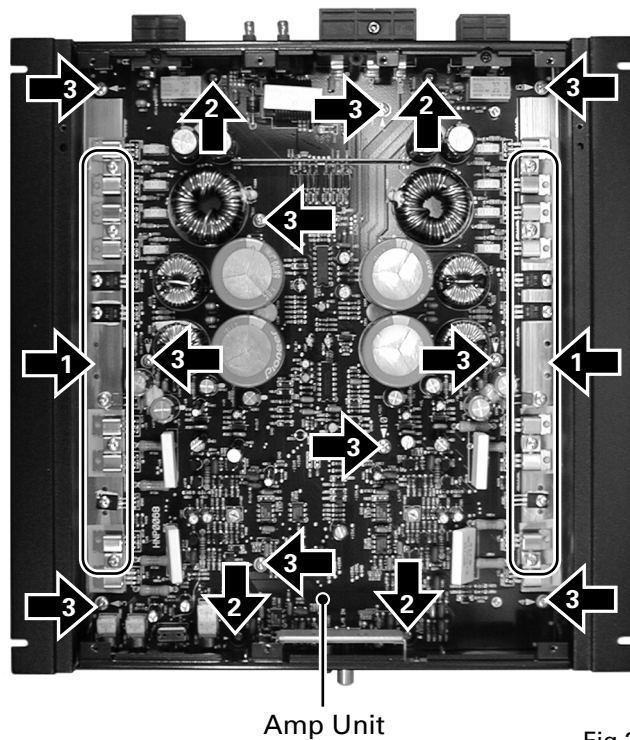
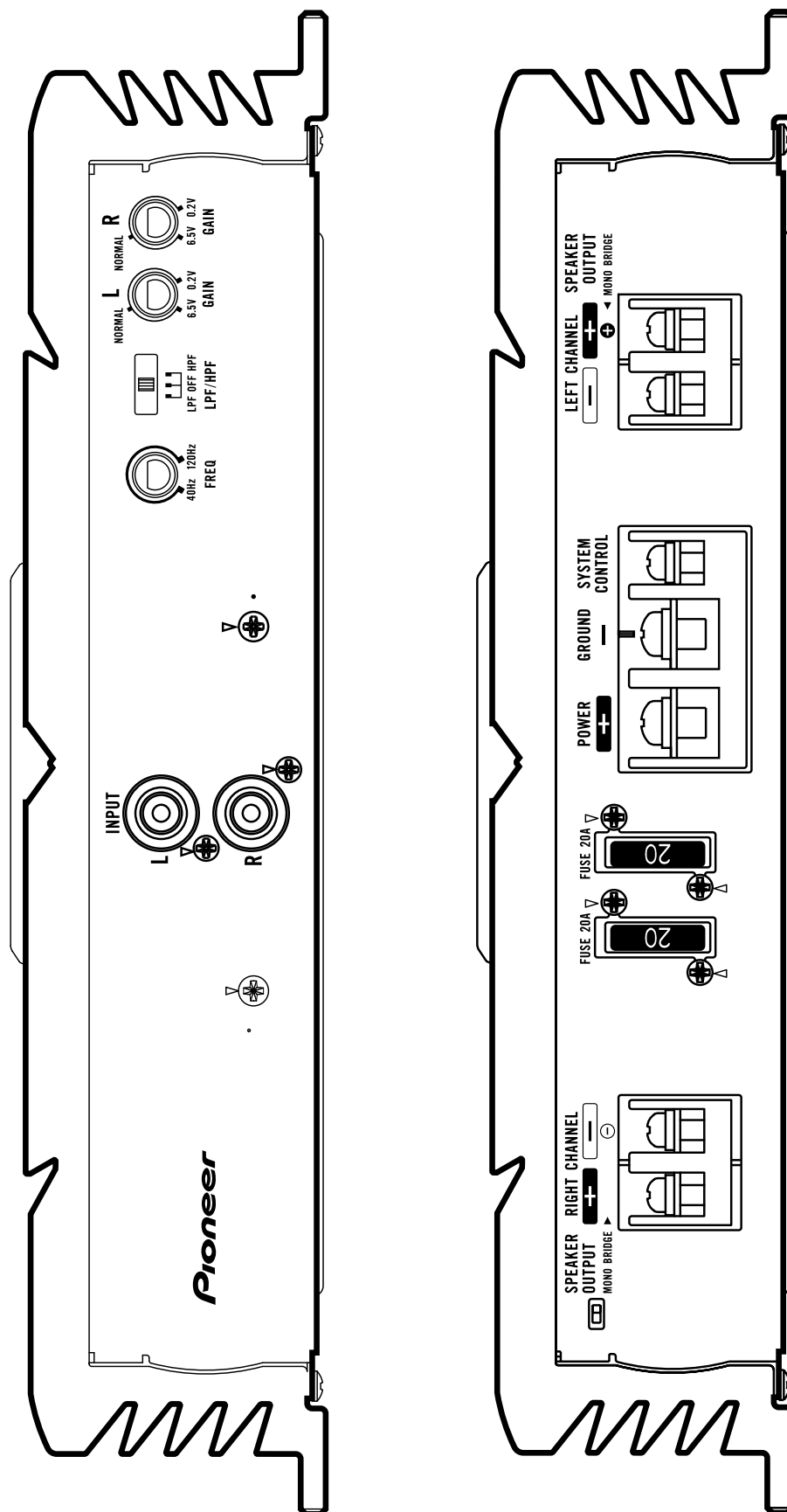


Fig.2

7.1.2 CONNECTOR FUNCTION DESCRIPTION



5 6 7 8

8. OPERATIONS

5 6 7 8

Gain Control

If the sound level is too low, even when the volume of the car stereo used along with this power amplifier is turned up, turn gain control on the front of the power amplifier clockwise. If the sound distorts when the volume is turned up, turn the gain control counter-clockwise.

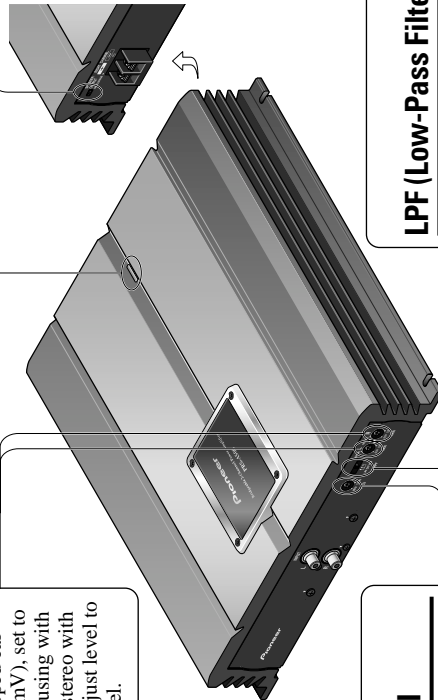
- When using with an RCA equipped car stereo (standard output of 500 mV), set to the NORMAL position. When using with an RCA equipped Pioneer car stereo with max. output of 4 V or more, adjust level to match the car stereo output level.

Power Indicator

The power indicator lights when the power is switched on.

BFC (Beat Frequency Control) Switch

If you hear a beat while listening to an MW/LW broadcast with your car stereo, change the BFC switch using a small standard tip screwdriver.



Cut Off Frequency Control

If the LPF/HPF select switch is set to LPF or HPF, you can select a cut off frequency from 40 to 120 Hz.

LPF (Low-Pass Filter)/HPF (High-Pass Filter) Select Switch

Set the LPF/HPF select switch as follows according to the type of speaker that is connected to the speaker output connector and the car stereo system:

LPF/HPF Select Switch	Audio frequency range to be output	Speaker Type	Remarks
LPF (Left)	* — 40 to 120 Hz	Subwoofer	Connect a subwoofer.
OFF (Center)	Full range	Full range	
HPF (Right)	* 40 to 120 Hz —	Full range	Use if you want to cut the very low frequency range* because it is not necessary for the speakers you are using.

* See the "Cut Off Frequency Control" section.